

Summary

This report describes the sexually transmitted disease burden in King County. Primary emphasis is placed on chlamydia and gonorrhea since they are the most frequently reported STDs in Washington State. The 2001 incidence rates by age and sex for gonorrhea and chlamydia are presented.

The report concludes with a presentation of which providers in your county reported STDs.

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King County STD Disease Trends

Table 1: Washington State Reportable Sexually Transmitted Diseases, King County, 2001

| Disease | 2000 King County Cases | 2001 King County Cases | 2001 King County Rate ^λ (per 100,000) | 2001 Washington State Rate ^λ (per 100,000) |
|--|------------------------------|------------------------------|---|--|
| Chlamydia | 4,495 | 4,295 | 244 | 228 |
| Gonorrhea | 1,222 | 1,556 | 88 | 50 |
| Early Syphilis | 66 | 55 | 3.1 | 1.3 |
| Congenital Syphilis | 1 | 0 | - | 0.0(live births) |
| Late/Late Latent Syphilis | 50 | 55 | 3.1 | 1.6 |
| Herpes (initial infection) | 745 | 672 | 38 | 31 |
| GI/LGV/Chancroid** | 0 | 0 | - | 0.0 |
| HIV cases** | 688 | 754 | | |
| AIDS cases** | 235 | 324 | | |
| TOTAL (excluding HIV/AIDS cases) | 6,579 | 6,633 | 377 | 312 |

^λ Denominator estimates for the calculation of incidence rates from Washington State Adjusted Population Estimates, OFM, November 2001.

* Rates cannot be calculated for years with fewer than five cases

** See Appendix A for explanation of disease acronyms.

In 2001, King County experienced an increase from 2000 in its combined STD morbidity rate. With 6,633 new cases of STDs (excluding HIV/AIDS cases ¹) in 2001, the incidence rate for all STDs was 377 per 100,000 persons. This is 21% greater than the 312 per 100,000 combined STD rate for Washington State. King County reported no cases of congenital syphilis or GI/LGV/Chancroid in 2001.

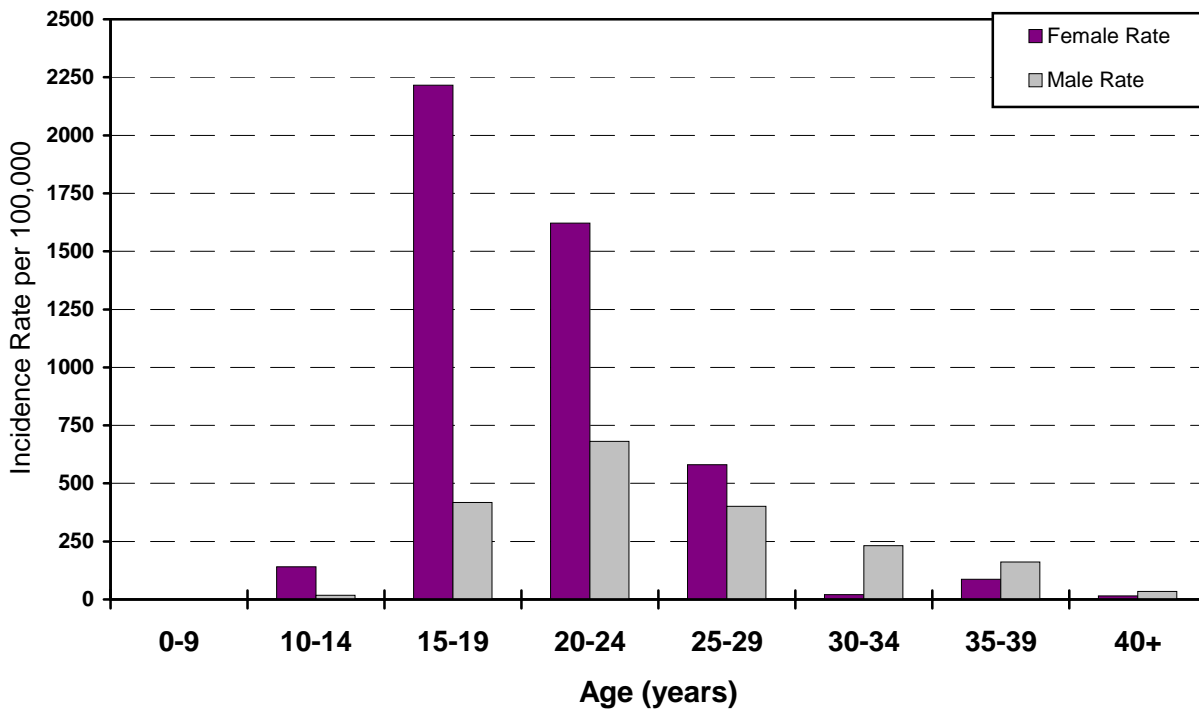
2001 compared to 2000:

- Chlamydia had a 4% decrease in reported cases (4,295 vs. 4,495).
- Gonorrhea had a 27% increase in reported cases (1,556 vs. 1,222).
- Early syphilis had a 17% decrease in reported cases (55 vs. 66).
- Late/late latent syphilis had a 10% increase in reported cases (55 vs. 50).
- Congenital syphilis had a 100% decrease in reported cases (0 vs. 1).
- Initial infection herpes had a 10% decrease in reported cases (672 vs. 745).

Chlamydia

¹ Complete information on the HIV/AIDS epidemic in Washington can be found in Washington State HIV/AIDS Surveillance Report, Washington State Department of Health, IDRH, Assessment Unit.

FIGURE 1: Chlamydia Incidence Rates by Age and Gender, King County, 2001^λ



| | | | | | | | | |
|--------------|---|-----|-------|-------|-----|-----|-----|-----|
| Female Rate | 0 | 140 | 2,216 | 1,621 | 581 | 200 | 87 | 15 |
| Male Rate | * | 18 | 418 | 681 | 401 | 232 | 161 | 35 |
| Female Cases | 0 | 76 | 1,190 | 973 | 391 | 149 | 65 | 57 |
| Male Cases | 1 | 10 | 235 | 414 | 285 | 187 | 125 | 128 |

^λ Denominator estimates for the calculation of incidence rates from Washington State Adjusted Population Estimates, OFM, November 2001. Incidence rates rounded to the nearest whole number.

* Rates cannot be calculated for ages with fewer than five cases.

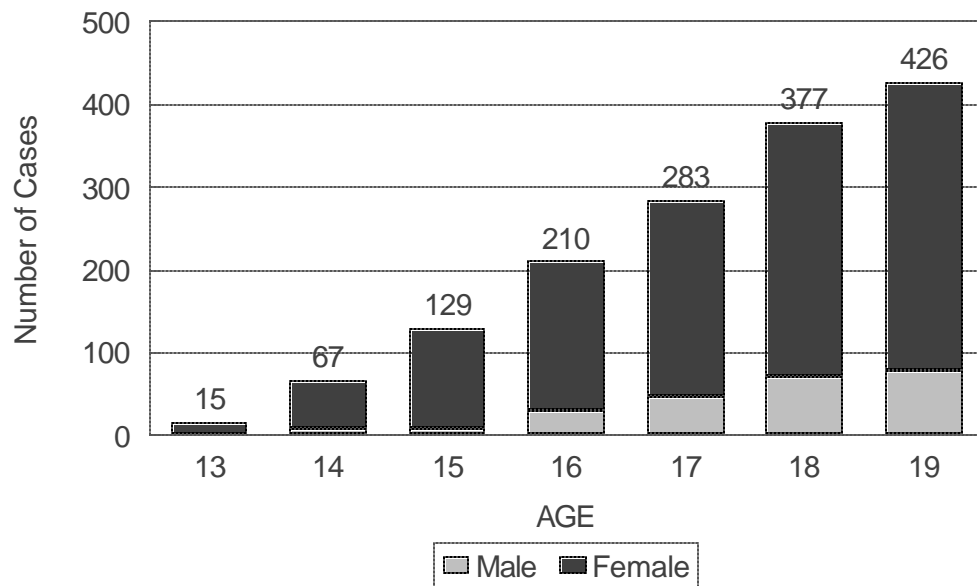
In 2001, the female chlamydia incidence rate peaked among the 15-19 year old age group, at 2,216 cases per 100,000. After this peak, chlamydia incidence among females progressively declined with increasing age. Among men, the 2001 chlamydia incidence rate peaked among 20-24 year olds at 681 cases per 100,000.

Only women are routinely screened for chlamydia. Because active case-finding is preferentially limited to women, the incidence of chlamydia in men may be under-reported by comparison. Caution should be used in interpreting comparisons of chlamydia rates between genders.

The [2002 STD Treatment Guidelines](#) from CDC recommends that all women diagnosed with chlamydia be re-screened three to four months after treatment. This was suggested because of the high prevalence of chlamydia found in women diagnosed with the disease in the preceding months, presumably as a result of re-infection.

KING COUNTY

TEEN (13-19) CHLAMYDIA CASES-2001



Repeater Infection (Person having more than one infection in a 12-month period prior to being treated.)

Recurrent infection is common and associated with increased risk of PID and other serious outcomes. Data suggest that young age and incomplete therapy increases the risk for a persistent/recurrent infection. Studies also suggest that women's current male sex partners are not receiving treatment for chlamydia and that women are being re-infected by resuming sex with preexisting (and infected) sex partners. Careful interviewing and prompt, concurrent treatment of all partners is important. People should be coached to ask health care providers for re-screening if risk behavior occurs.

Table 2: **Chlamydia** Repeater Infections, King County, 2001.

| | MALE | FEMALE | TOTAL |
|----------------------|-------------|---------------|--------------|
| Reported Cases | 1,389 | 2,906 | 4,295 |
| Repeaters Identified | 91 | 405 | 496 |
| % Repeaters | 7% | 14% | 12% |
| Age | | | |
| 0-9 | | | |
| 10-14 | | 16 | 16 |
| 15-19 | 17 | 223 | 240 |
| 20-24 | 38 | 126 | 164 |
| 25-29 | 14 | 29 | 43 |
| 30-34 | 4 | 7 | 11 |
| 35-39 | 11 | 2 | 13 |
| 40+ | 7 | 2 | 9 |
| Unknown | | | |

Asymptomatic Infection

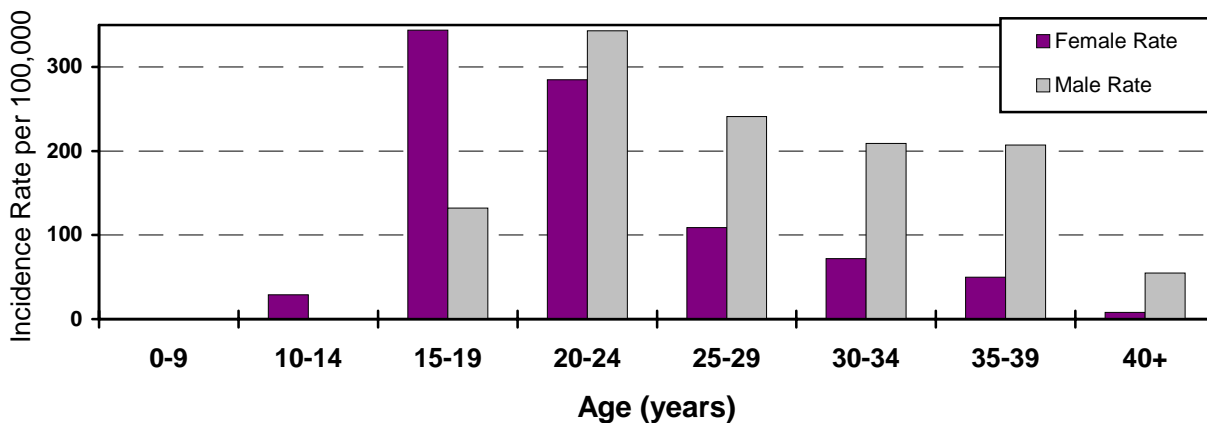
STD infections often lack signs and symptoms. Additionally, signs of severe complications may not appear until long after infection, reducing the likelihood that the patient will associate complications with the initial time of infection. Screening sexually active adolescents (19 years and younger) for chlamydia should be routine during annual examinations even if symptoms are not present. Screening women and men aged 20-24 is also suggested, particularly those who have new or multiple sex partners and who do not consistently use barrier contraceptives. Careful interviewing and treatment of all partners is important.

Table 3: Reported Cases of **Chlamydia** by Diagnostic Category, King County, 2001.

| | Private | | Public | | Total | | Total |
|-----------------------------|----------------|--------------|---------------|------------|--------------|--------------|--------------|
| Diagnosis | Male | Female | Male | Female | Male | Female | Cases |
| Asymptomatic | 193 | 1,124 | 549 | 560 | 742 | 1,684 | 2,426 |
| Symptomatic-Uncomplicated | 466 | 811 | 152 | 270 | 618 | 1,081 | 1,699 |
| Pelvic Inflammatory Disease | | 60 | | 10 | | 70 | 70 |
| Other | 3 | 2 | | 3 | 3 | 5 | 8 |
| Unknown | 16 | 47 | 10 | 19 | 26 | 66 | 92 |
| TOTAL | 678 | 2,044 | 711 | 862 | 1,389 | 2,906 | 4,295 |

Gonorrhea

FIGURE 3 BAR CHART: Gonorrhea Incidence Rates by Age and Sex, King County, 2001^λ



| | | | | | | | | |
|--------------|---|----|-----|-----|-----|-----|-----|-----|
| Female Rate | * | 29 | 344 | 285 | 109 | 72 | 50 | 8 |
| Male Rate | 0 | * | 132 | 342 | 241 | 209 | 207 | 55 |
| Female Cases | 2 | 16 | 185 | 171 | 73 | 54 | 37 | 33 |
| Male Cases | 0 | 2 | 74 | 208 | 171 | 168 | 161 | 198 |

^λ Denominator estimates for the calculation of incidence rates from Washington State Adjusted Population Estimates, OFM, November 2001. Incidence rates rounded to the nearest whole number.

* Rates cannot be calculated for years with fewer than five cases.

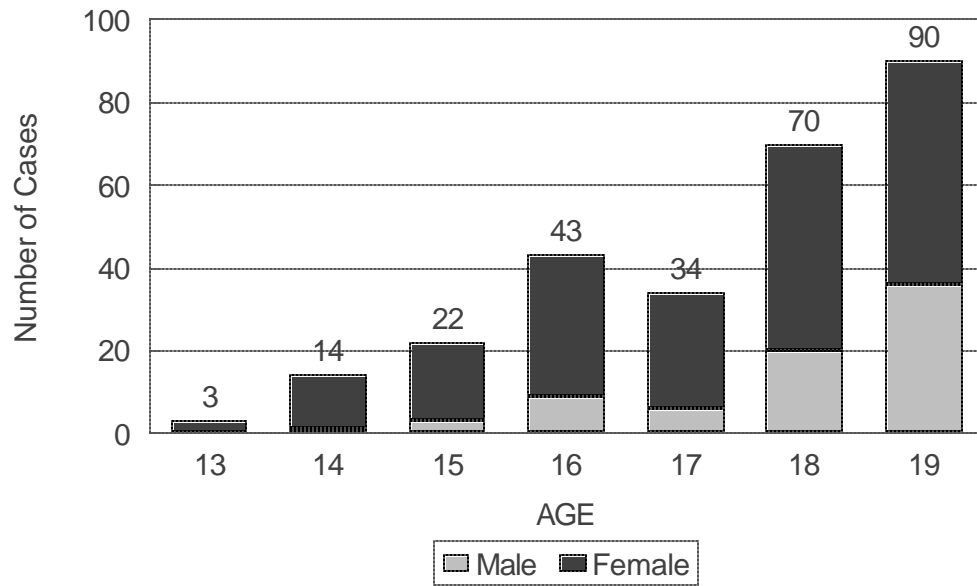
In 2001, the female gonorrhea incidence rate peaked among the 15-19 year old age group at 344 cases per 100,000. After this peak, gonorrhea incidence among females progressively declined with increasing age. Among men, the 2001 gonorrhea incidence rate peaked among 20-24 year olds at 342 cases per 100,000. These cases and rates declined at different rates than the female rates because of an outbreak of gonorrhea in gay men.

The age distribution of gonorrhea differs between genders and age groups. For Washington State, the peak incidence rate for both males and females is in the 20-24 year old age group. The greatest incidence of disease among females, 66% of total morbidity, is among 15-24 year olds, while for males the burden of disease is distributed more evenly among those 25 and older. In 2001, males had a higher gonorrhea incidence rate (56.8/100,000) than females (43.4/100,000). Factors contributing to the distribution of gonorrhea incidence in different age groups among men and women are the presumed age gap between men and women in sexual relationships as well as an outbreak among men-who-have-sex-with-men (MSM) in Western Washington whose median reported age was 30.

Because most gonorrhea cases are symptomatic and seek medical care, reported cases are considered to be an accurate reflection of true disease incidence in the overall population. Providers in Washington State who reported gonorrhea cases in 2001 indicated that 86% of the men were symptomatic for gonorrhea; 47% of the women were symptomatic. Unlike chlamydia, there is no widespread screening program for gonorrhea, however, most clinics provide gonorrhea screening at some level and 99% will perform gonorrhea testing if the client is symptomatic.

KING COUNTY

TEEN (13-19) GONORRHEA CASES-2001



National gonorrhea incidence rates declined through the late nineties and have remained essentially unchanged from 1998 to the present. In Washington State, gonorrhea incidence declined through 1998 but has increased over the most recent three reporting years. The statewide increase noted from 1998-2001 is influenced by the previously noted increases in gonorrhea infections among MSM.

Table 4: **Gonorrhea Repeater Infections, King County, 2001.**

| | MALE | FEMALE | TOTAL |
|----------------------|------|--------|-------|
| Reported Cases | 984 | 572 | 1,556 |
| Repeaters Identified | 107 | 50 | 157 |
| % Repeaters | 11% | 9% | 10% |
| Age | | | |
| 0-9 | | | |
| 10-14 | | 3 | 3 |
| 15-19 | 3 | 19 | 22 |
| 20-24 | 29 | 18 | 47 |
| 25-29 | 24 | 5 | 29 |
| 30-34 | 13 | 2 | 15 |
| 35-39 | 8 | 2 | 10 |
| 40+ | 28 | 1 | 29 |
| Unknown | 2 | | 2 |

Table 5: Reported Cases of **Gonorrhea** by Diagnostic Category, King County, 2001.

| | Private | | Public | | Total | | Total |
|-----------------------------|------------|------------|------------|------------|------------|------------|--------------|
| Diagnosis | Male | Female | Male | Female | Male | Female | Cases |
| Asymptomatic | 39 | 153 | 63 | 81 | 102 | 234 | 336 |
| Symptomatic-Uncomplicated | 447 | 180 | 372 | 92 | 819 | 272 | 1,091 |
| Pelvic Inflammatory Disease | | 33 | | 7 | | 40 | 40 |
| Other | 5 | 1 | | | 5 | 1 | 6 |
| Unknown | 22 | 14 | 35 | 11 | 57 | 25 | 82 |
| TOTAL | 513 | 381 | 470 | 191 | 983 | 572 | 1,555 |

Conclusion

Table 6: Reported Cases of Chlamydia and Gonorrhea by Provider Type, King County, 2001

| Provider Type | Chlamydia | | | Gonorrhea | | |
|------------------------------|------------------|--------------|------------------------|------------------|--------------|------------------------|
| | No. of Providers | No. of Cases | Percent of Total Cases | No. of Providers | No. of Cases | Percent of Total Cases |
| Alcohol/Substance Abuse | | | | | | |
| Blood Bank/Plasma Center | | | | | | |
| Community Health Center | 12 | 173 | 4% | 6 | 80 | 5% |
| Emergency Care (excl. hosp.) | 24 | 166 | 4% | 18 | 112 | 7% |
| Family Planning | 16 | 382 | 9% | 6 | 33 | 2% |
| Health Plan/HMOs | 22 | 240 | 6% | 17 | 73 | 5% |
| HIV/AIDS | 1 | 1 | 0% | 2 | 2 | 0% |
| Hospitals | 31 | 249 | 6% | 20 | 177 | 11% |
| Indian Health | 3 | 25 | 1% | 2 | 11 | 1% |
| Jail/Correction/Detention | 7 | 332 | 8% | 5 | 112 | 7% |
| Job Corps | 2 | 3 | 0% | | | |
| Migrant Health | 4 | 65 | 2% | 2 | 7 | 0% |
| Military | 2 | 8 | 0% | 1 | 1 | 0% |
| Neighborhood Health | 8 | 55 | 1% | 6 | 17 | 1% |
| OB/GYN | 30 | 184 | 4% | 9 | 21 | 1% |
| Other | 186 | 883 | 21% | 101 | 297 | 19% |
| Private Physicians | 26 | 41 | 1% | 15 | 37 | 2% |
| Reproductive Health | 10 | 550 | 13% | 9 | 79 | 5% |
| STD Clinics | 5 | 493 | 12% | 3 | 431 | 28% |
| Student Health | 14 | 445 | 10% | 7 | 65 | 4% |
| TOTAL | 403 | 4,295 | 100% | 229 | 1,555 | 100% |

In King County, the Other providers reported the highest number of chlamydia cases. These providers reported 21% of the total. Reproductive Health reported the second highest number of chlamydia cases (13%). Gonorrhea cases (28% of the total) were most frequently reported by STD Clinics.

The Healthy People 2010 national objectives for chlamydia incidence are:

Females aged 15-24 attending family planning clinics: 3%. There are 8 Region X Chlamydia Project* Family Planning clinics in King County. The 2001 positivity rate for females was:

| Site | Male | | | Female | | |
|-----------------------------------|---------|-------|-------|---------|-------|-------|
| | # Tests | # Pos | % Pos | # Tests | # Pos | % Pos |
| International District | 10 | 1 | 10.0 | 442 | 15 | 3.4 |
| International District-Holly Park | 9 | 1 | 11.1 | 178 | 9 | 5.1 |
| PP of Western WA-Bellevue | 4 | 0 | 0.0 | 1,543 | 66 | 4.3 |
| PP of Western WA-Kenmore | 1 | 0 | 0.0 | 836 | 37 | 4.4 |
| PP of Western WA-Kent Valley | 1 | 0 | 0.0 | 924 | 56 | 6.1 |
| PP of Western WA-Federal Way | 3 | 1 | 33.3 | 1,126 | 68 | 6.0 |
| PP of Western WA-Central | 0 | 0 | 0.0 | 1,944 | 65 | 3.3 |
| PP of Western WA-University | 4 | 0 | 0.0 | 1,465 | 59 | 4.0 |

Females aged 15-24 attending STD clinics: 3%.

Males aged 15-24 attending STD clinics: 3%.

There are 11 Region X Chlamydia Project* STD/Reproductive Health clinics in King County.

The 2001 positivity rate was:

| Site | <u>Male</u> | | | <u>Female</u> | | |
|---|--------------------|----------|----------|----------------------|----------|----------|
| | # Tests | # Pos | % Pos | # Tests | # Pos | % Pos |
| Public Hlth-Seattle & King Co-Auburn | 184 | 28 | 15.2 | 1,192 | 58 | 4.9 |
| Public Hlth-Seattle & King Co-Downtown | 65 | 8 | 12.3 | 688 | 30 | 4.4 |
| Public Hlth-Seattle & King Co-Eastgate | 33 | 4 | 12.1 | 430 | 18 | 4.2 |
| Public Hlth-Seattle & King Co-Federal Way | 170 | 17 | 10.0 | 1,698 | 91 | 5.4 |
| Public Hlth-Seattle & King Co-North | 137 | 14 | 10.2 | 1,106 | 58 | 5.2 |
| Public Hlth-Seattle & King Co-North Shore | 96 | 8 | 8.3 | 877 | 34 | 3.9 |
| Public Hlth-Seattle & King Co-Southeast | 95 | 14 | 14.7 | 414 | 20 | 4.8 |
| Public Hlth-Seattle & King Co-Southeast Kent | 271 | 55 | 20.3 | 2,575 | 195 | 7.6 |
| Public Hlth-Seattle & King Co-Southwest | 173 | 21 | 12.1 | 1,513 | 66 | 4.4 |
| Public Hlth-Seattle & King Co-Columbia Hlth Ctr | 132 | 24 | 18.2 | 1,160 | 100 | 8.6 |
| Public Hlth-Seattle & King Co-Harborview STD | 5,965 | 381 | 6.4 | 2,441 | 125 | 5.1 |

Other Region X Chlamydia Project Sites in King County include:

| Site | <u>Male</u> | | | <u>Female</u> | | |
|------------------------------------|--------------------|----------|----------|----------------------|----------|----------|
| | # Tests | # Pos | % Pos | # Tests | # Pos | % Pos |
| Echo Glen Detention (Snoqualmie) | 191 | 6 | 3.1 | 86 | 6 | 7.0 |
| Cleveland HS Teen Clinic | 17 | 1 | 5.9 | 312 | 12 | 3.8 |
| Franklin Teen Hlth Ctr | 11 | 0 | 0.0 | 301 | 15 | 5.0 |
| Garfield/Nova Teen Ctr | 28 | 1 | 3.6 | 170 | 13 | 7.6 |
| Nathan Hale Teen Hlth Ctr | 12 | 0 | 0.0 | 234 | 8 | 3.4 |
| Rainier Beach Teen Hlth Ctr | 19 | 2 | 10.5 | 228 | 21 | 9.2 |
| Roosevelt/Marshall Teen Hlth Ctr | 9 | 1 | 11.1 | 152 | 4 | 2.6 |
| Sealth/Denny Teen Hlth Ctr | 7 | 1 | 14.3 | 13 | 0 | 0.0 |
| West Seattle/Madison Teen Hlth Ctr | 36 | 3 | 8.3 | 91 | 5 | 5.5 |
| Seattle University | 0 | 0 | 0.0 | 76 | 0 | 0.0 |

The year 2010 Healthy People national objective for gonorrhea incidence is 19 cases per 100,000.

King County is working toward met this goal with the 2001 rate of 88 cases per 100,000.

*For Region X Chlamydia Project Screening Criteria see page 12.

Appendix A: Data Sources, Analyses and Limitations

Cases: The number of cases identified and submitted by providers to local health jurisdictions and forwarded to the Washington State Department of Health, Office of Infectious Disease and Reproductive Health, STD/TB Services.

Population: Denominator population estimates for incidence rates are from Washington State Adjusted Population Estimates, Office of Financial Management (OFM), November 2001.

Incidence Rates: Incidence rates are calculated as the number of new episodes of a disease (not persons) in a given year divided by the total population (age and sex appropriate) for that year, expressed as a rate per 100,000. Incidence rates allow comparisons between two or more populations by standardizing the denominator and are the most appropriate statistic to use when investigating differences between groups. Rates should not be calculated for incident case totals fewer than five because the rates are unstable.

Data Reporting: Gonorrhea, chlamydia, syphilis, and herpes (initial infection) are reportable diseases to the local health jurisdictions and forwarded to the Department of Health. To be reported and included in surveillance data, disease definition must be met.

Disease Definitions:

- Gonorrhea - isolation of *Neisseria gonorrhea* from a clinical specimen or observation of gram-negative intracellular diplococci in urethral smears or endocervical smears.
- Chlamydia- isolation of *Chlamydia trachomatis* from a clinical specimen by culture or non-culture methods that detect chlamydia antigen or genetic material.
- Syphilis - a complex sexual transmitted disease with a highly variable clinical course. See CDC guidelines for surveillance definition.
- Herpes Simplex (initial infection only) - diagnostic criteria for reporting can be made through clinical observation of typical lesions and/or laboratory confirmation.
- Chancroid - an STD characterized by painful genital ulceration and inflammatory inguinal adenopathy.
- Granuloma Inguinale (GI) - a slowly progressive ulcerative disease of the skin and lymphatics of the genital and perianal area.
- Lymphogranuloma Venereum (LGV) - characterized by genital lesions, suppurative regional lymphadenopathy, or hemorrhagic proctitis.
- HIV – Human Immunodeficiency Virus is a retrovirus causing HIV disease and AIDS (Acquired Immunodeficiency Syndrome) in humans. This pathogen is transmitted from person to person through unprotected sexual contact, sharing of injection equipment and transfusion/transplantation with infected blood or tissue
- AIDS – Acquired Immunodeficiency Syndrome is the advanced stage of HIV-disease in humans and is characterized by severe suppression of immune response. Persons with AIDS are at risk for increased susceptibility to opportunistic infections, degradation of major organ systems and eventual death.

The diagnosing practitioner is responsible for providing the case information which includes patient demographics, source of diagnosis, limited clinical information including site of infection and treatment, and date of diagnosis.

Data Strengths: Sexually transmitted disease data may provide more timely information on behavioral trends in the community than diseases with similar modes of transmission particularly HIV/AIDS. There is a high level of participation in the STD surveillance system by private providers of STD services.

Data Limitations: Clinically diagnosed cases of STDs (without laboratory confirmation) may be missed through this surveillance system. Depending upon diagnosing practices, completeness of reporting may vary by source of health care.

Data Biases: Biases could exist in the data due to under-reporting, inability of certain populations to access medical services, error in laboratory reporting, or differential reporting or screening by disease and source of care. However, it is assumed that the number of cases that would fall into these categories is small and normally distributed, thus not significantly impacting the calculated STD rates.

Assumptions: It is assumed that the cases reported from year to year are independent of each other. One violation of this assumption could be if a person who has an STD one year is more likely to have an STD the following year. Also, repeat episodes of the same STD by the same person are not excluded from the numerator count; it is felt that these numbers are not large enough to significantly impact the calculated incidence rates. Finally, we have assumed that all rates follow a chi-square distribution.

Female Selective Screening Criteria in Family Planning and Expansion Sites:

1. Women 24 and under are to be tested when undergoing a pelvic examination or
2. Women of any age who meet one of the following criteria should be screened at any visit if a pelvic exam is performed:

- a. Cervicitis or signs and/or symptoms of other STD,*
- b. PID,
- c. Exposed to CT, GC or NGU in past 60 days,
- d. New sex partner during past 60 days,
- e. Two or more sex partners during the past 60 days,
- f. Pregnant/Currently planning a pregnancy,
- g. Seeking an IUD insertion,
- h. Prior + chlamydia or other STD* within the past 12 months.

* STD is defined as Positive for Chlamydia, Gonorrhea, Trichomonas, Syphilis or a Primary case of Herpes or Warts (HPV).